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ABSTRACT

One of a series of student booklets on the Canadian environment, this unit helps secondary students understand what a resource is, consider Canada's many and diverse resources, learn about renewable and non-renewable resources, understand how the use of natural resources affects life-styles, and understand the importance of managing resources wisely. Four stages make up the unit. "Stage One: Resources--A Mixed Bag," contains three activities in which students distinguish between raw materials and finished products, define renewable and non-renewable resources, and study graphs and complete a resource chart. In "Stage Two: Mining: Your Own Business," students are asked to examine three cross-section diagrams of mining methods, match non-renewable resources with products, and examine two charts and a timeline showing Canada's mineral resource wealth for the years 1950 and 1980. In the activities in "Stage Three: Do You Mine?" students look at factors influential in the decision of whether or not to mine. "Stage Four: The Mining Town" contains activities intended to help students understand the economic, social, and environmental impacts of mining on a community. A summary statement is followed by a final activity in which students read newspaper clippings and write personal responses. (LH)

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ROBERT DWYER
STEPHEN PENNEY

UNDERSTANDING THE CANADIAN ENVIRONMENT

CANADA

CHALLENGES IN THE DEVELOPMENT OF RESOURCES

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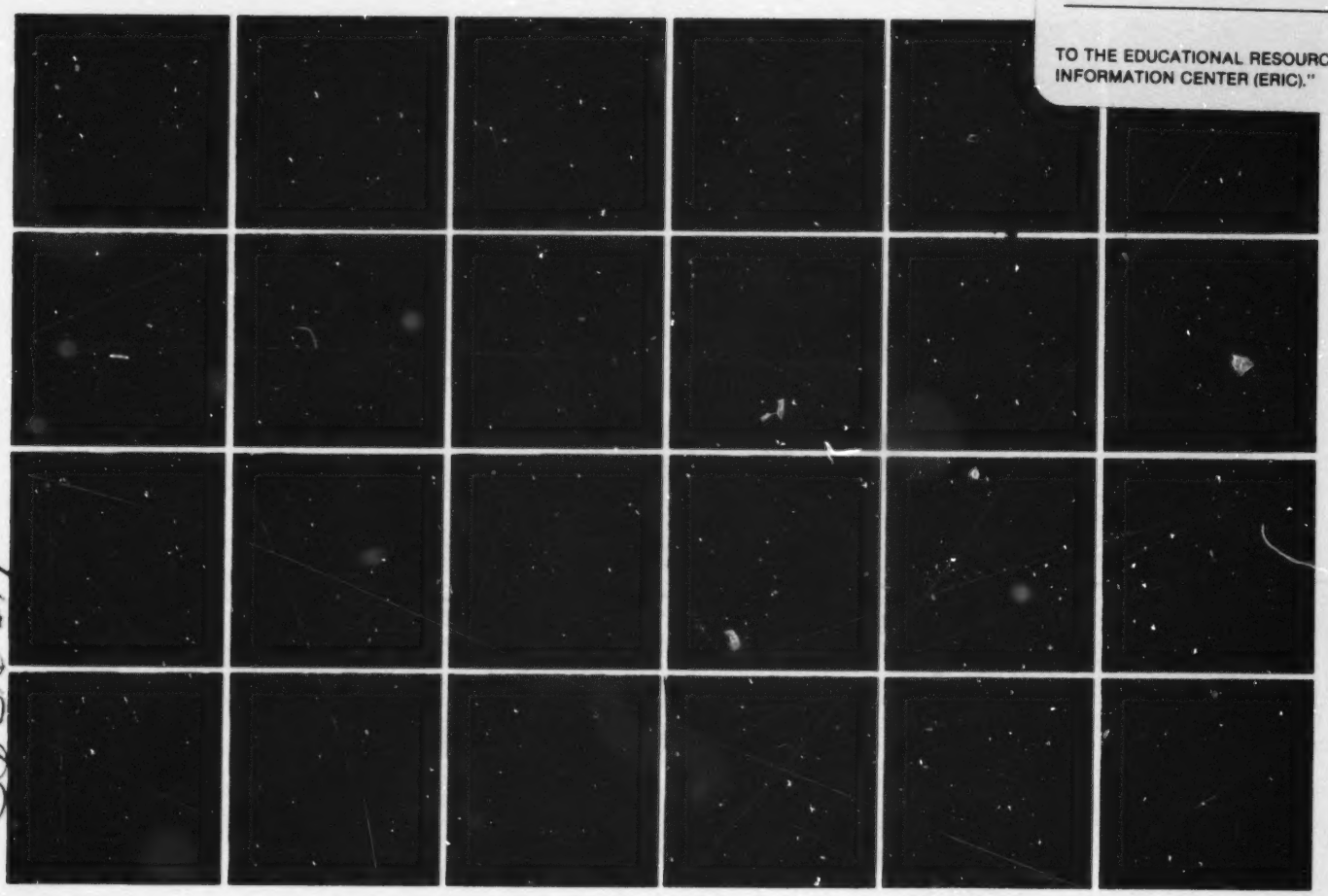

SOC 614

CANADA

CHALLENGES IN THE DEVELOPMENT OF RESOURCES

Robert Dwyer
Stephen Penney

THE CANADA STUDIES FOUNDATION

Established in 1970 with individual, corporate and governmental support at both provincial and federal levels, the Canada Studies Foundation, currently funded by the Department of the Secretary of State, has actively promoted mutual understanding among the diversity of peoples in Canada. With the conviction that schools can and must provide a knowledge base to help young Canadians become more informed and more active citizens, the Foundation has supported teachers across Canada in the development of books and other learning materials that assist students in one part of Canada to learn more about their fellow Canadians in other parts of our vast country.

This is one of fourteen units being prepared under the series title *Understanding the Canadian Environment* by Canada Studies Foundation: Atlantic Centre.

Project Co-ordinator: Derek Hounsell

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INTRODUCTION

Canada is rich in resources. This unit will help you:

- understand what a resource is,
- know that Canada has many and diverse resources,
- know what renewable and non-renewable resources are,
- understand how the use of some of our natural resources affects the life-styles of people,
- understand how resource use and development have improved the quality of life for many Canadians, but not equally throughout Canada,
- understand how resource development places a responsibility on Canadians to manage their resources wisely.

STAGE ONE: RESOURCES – A MIXED BAG

Canada is a country rich in natural resources. A *natural resource* is any *raw material* which man can use, (including his talents), to make life easier. The richness of resources and the number of resources differ from one place to another.

CHECKING YOUR UNDERSTANDING

Activity One

Examine the items listed below. Can you tell which are raw materials and which are finished products?

1. Beaver swimming in a pond.
2. Sheepskin rug.
3. Breakfast cereals.
4. Gold in the Fraser River.
5. Niagara Falls.
6. Box car full of wheat.
7. Lumber.
8. Oil in a pipeline.
9. Wedding rings.
10. A gigantic Douglas Fir.

Our natural resources are of two types: *renewable* and *non-renewable, e.g.*, a tree is a renewable resource, one which can be replaced in time. On the other hand, oil is a non-renewable one; once used, it is gone forever. It is important to understand this difference in order to appreciate the importance of resource development, which we will be studying in later chapters.

CHECKING YOUR UNDERSTANDING

Activity Two

Listed below are some of the most important natural resources of Canada. Label each resource as *renewable* or *non-renewable*.

1. Forest.
2. Iron ore.
3. Natural gas.

4. Fish.
5. People.
6. Fur-bearing animals.
7. Copper ore.
8. Farmland.
9. Asbestos ore.
10. Uranium ore.

Can you suggest ways of making the resources you have labelled in Activity Two as non-renewable *last longer* than they do in the present circumstances? Write down your ideas tor doing this. Be as specific as you can.

"A PIECE OF THE PIE"

Figure 1

*Explorations going on.

Activity Three

Above is an outline map of Canada. Included with this map are pie graphs showing selected resources for each province and territory.

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Having studied the pie graphs carefully, check (✓) correct boxes for resource by province and territory. Example: Quebec is partly completed for you.

Province	Mining	Fishing	Forestry	Farming	Oil/Gas	Hydro
Nfld/Lab.						
N.S.						
P.E.I.						
Que.		✓				✓
Ont.						
Man.						
Sask.						
Alta.						
B.C.						
Yukon						
N.W.T.						

CHART 1

CHECKING YOUR UNDERSTANDING

Pie Graph Activity

Think carefully about the following questions and then write your answers in your booklet.

1. What is a *have province/a have-not province*?
2. From Chart 1, you will have noticed that Ontario and Newfoundland/Labrador have similar kinds of resources. Would you conclude that Ontario and Newfoundland/Labrador are equally wealthy? Give reasons.
3. Alberta has few major mineral resources. Would you conclude that Alberta is a relatively poor province in Canada? Give reasons.

STAGE TWO: MINING: YOUR OWN BUSINESS

Just as the wealth of provinces rise and fall as they relate to mining, so the fortunes of individual mining towns will rise and fall, according to certain factors.

Having examined the pie graphs and Figure 2 which shows you in some light how the provinces of Canada differ in regard to the number of resources, you are now asked to look carefully at a certain family of natural resources — those of the non-renewable type: the minerals or ore-bearing rocks, *e.g.*, iron ore, gold, asbestos.

To begin your study, look carefully at the three cross-section diagrams of mining methods which follow. Each method is labelled.

SURFACE MINING

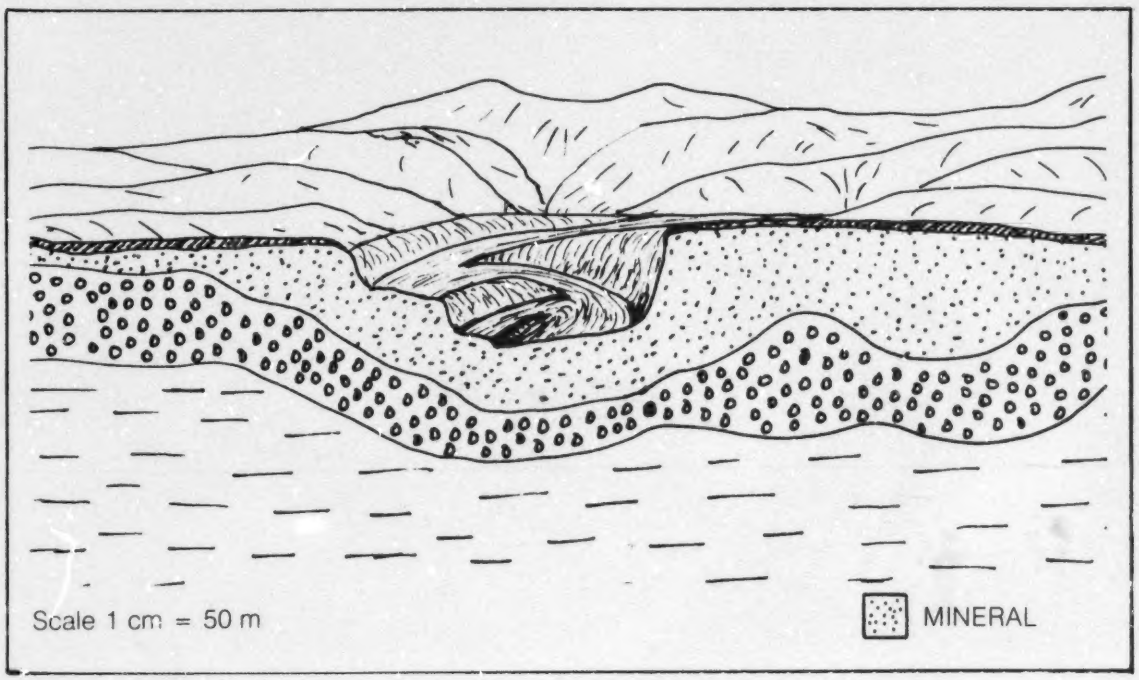

Figure 2

SHAFT MINING

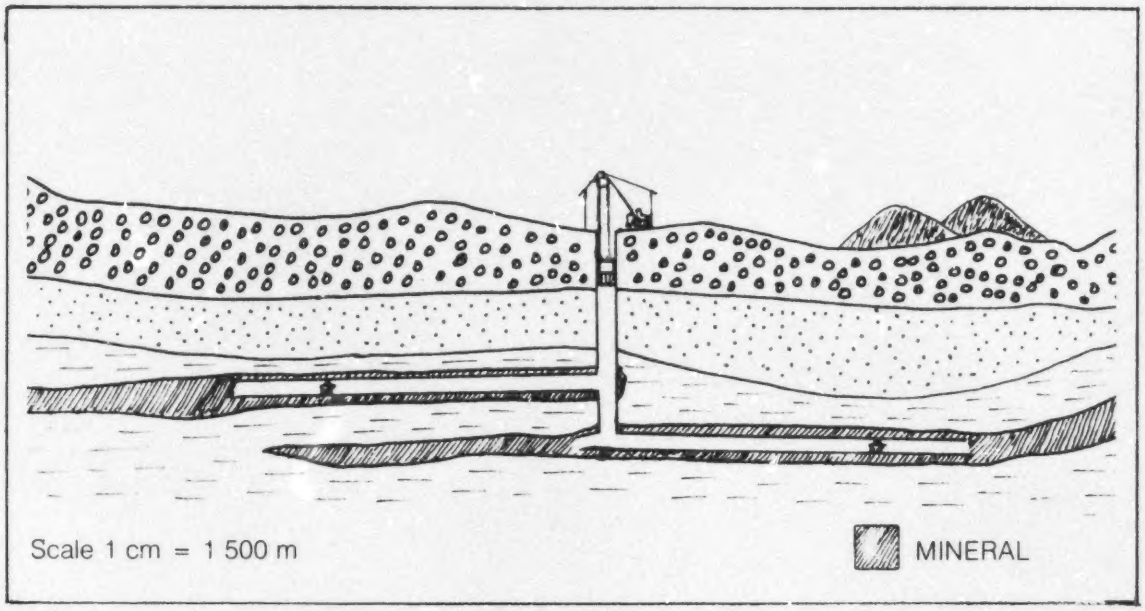

Figure 3

SLOPE MINING

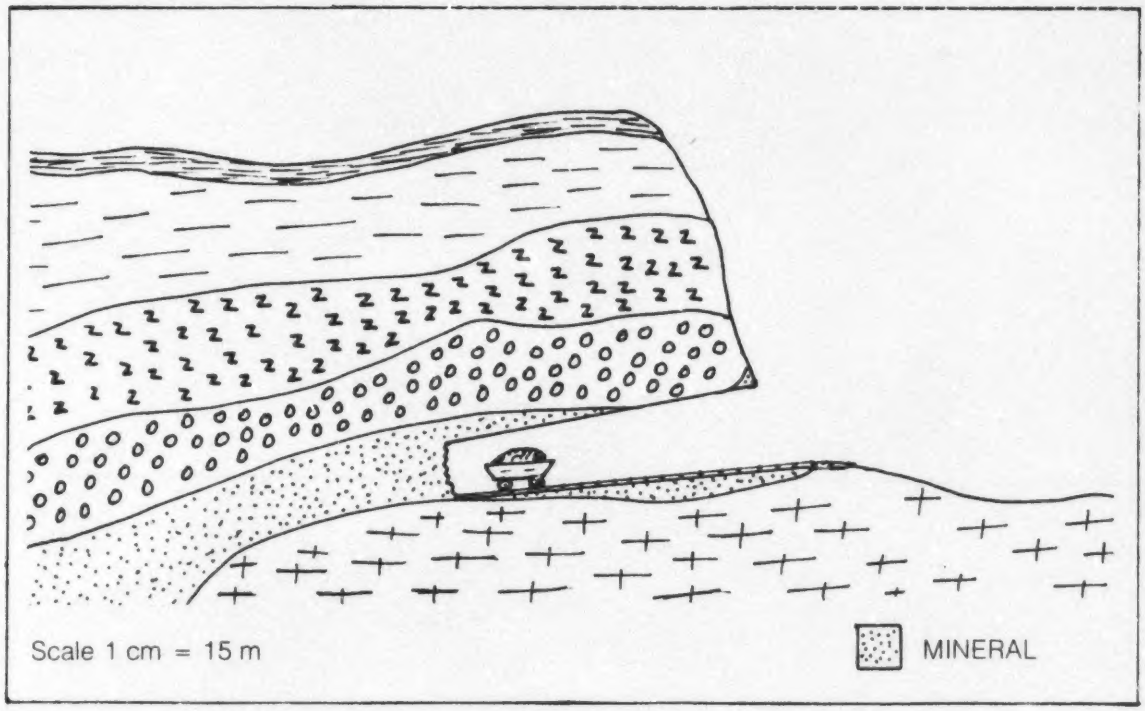

Figure 4

CHECKING YOUR UNDERSTANDING

Activity One

You have seen the cross-section diagrams showing *three* methods of taking ore from the earth. Examine these diagrams closely, then answer the following questions:

1. In your own words, describe the way each mining method is carried out. (How would you get the ore out of the ground?)
2. From the diagrams given, can you explain *why* there are *three* different types of mining methods?
3. Place the three types of mines in order of operation. Which is easier/harder? Which is least/most expensive? Can you explain why?
4. Which one do you think would likely be the most harmful to the environment?
5. In which one would you like to work? Give reasons.

Canadians have developed basic resources to meet their needs, or to sell or trade with other countries. For example, while we use most of the oil and gas we produce, much of the silver produced has traditionally been *exported*.

CHECKING YOUR UNDERSTANDING

Activity Two

Listed below are five types of non-renewable minerals which we use in our society to meet our *needs*.

Oil	Iron	Asbestos	Limestone	Copper

Each item or product listed below is made from one of the resources mentioned above. Place the item or product with the proper resource.

- cement
- gasoline (cars)
- steel beams
- bronze baby shoe
- concrete
- asphalt
- fireman's clothing
- gasoline (stoves)
- tin can
- penny
- bricks
- railways tracks
- insulation
- furnace filters
- electric wire

Following are two charts showing Canada's mineral resource wealth for the years 1950 and 1980. The charts show the dollar value (millions) to the province from the sale or production of its mineral resources. Examine the two charts carefully before completing the following activity.

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CHECKING YOUR UNDERSTANDING

1. Which province or territory produced the most mineral wealth in 1950?, 1980?
2. Which province or territory produced the least mineral wealth in 1950?, 1980?
3. What *factors* might explain the *changes* you see in the 1950 and 1980 charts?
4. Can you think of ways the people of Alberta, for example, might have been affected by the changes tney have seen in their province's wealth.
5. Do you think that one area of Canada might become so rich that it would want to be separated from the rest of the country? Give reasons.
6. Colour the part of the pie graphs that represents your province (1950, 1980). How do they compare?

CANADA'S MINERAL RESOURCE GALAXY: 1950

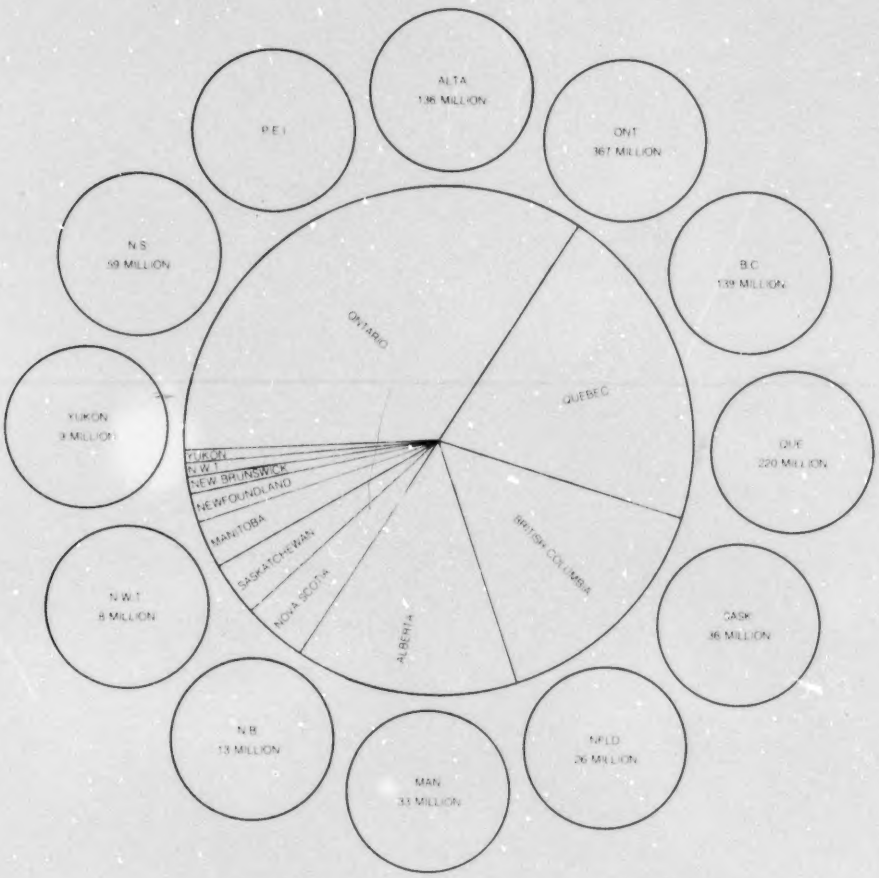

Figure 5

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CANADA'S MINERAL RESOURCE GALAXY: 1980

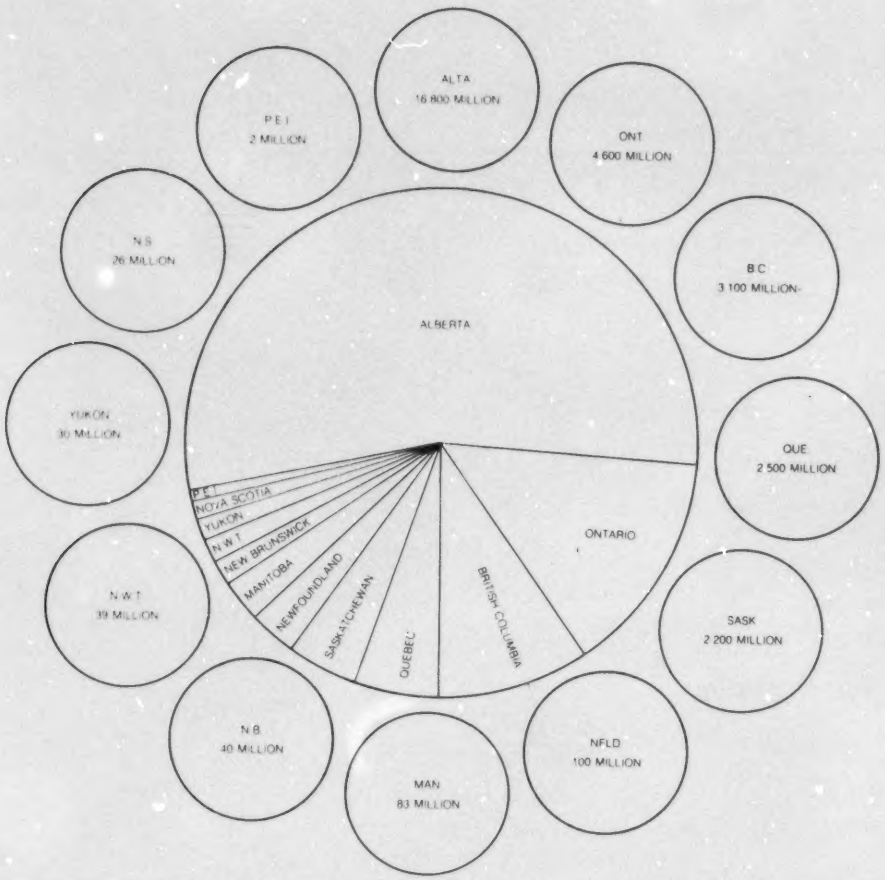
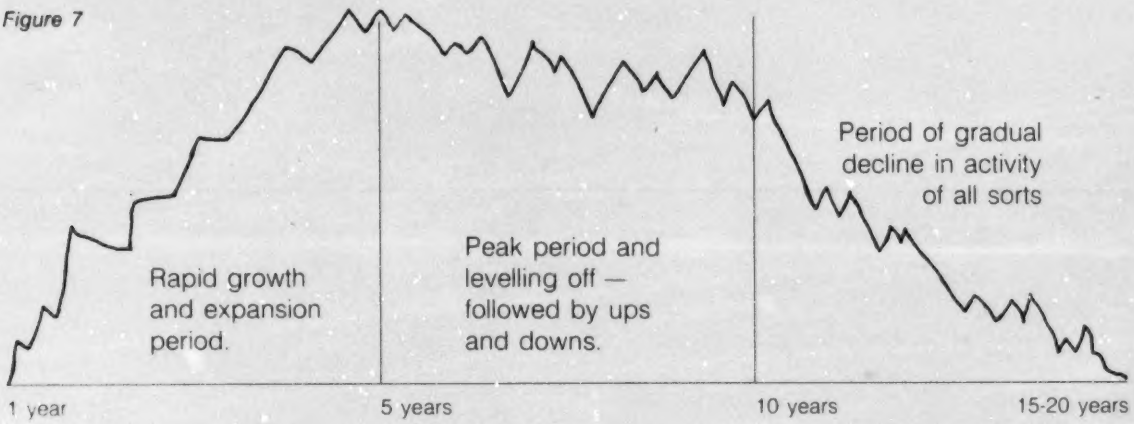


Figure 6

It seems to be true that few mining towns have survived the *depletion* of the natural resource which caused their original growth. The lifespan of any mine varies greatly. Generally, most mines operate between 15 and 20 years.

In Figure 7, you are given a timeline in three parts showing the lifespan of the average mine.

Figure 7


Rapid growth and expansion period.
Peak period and levelling off — followed by ups and downs.
Period of gradual decline in activity of all sorts
1 year
5 years
10 years
15-20 years

CHECKING YOUR UNDERSTANDING

Activity Three

In Figure 7, each part of the timeline has certain specific features which help form a general pattern. Some of these features are given below. Can you place these features in their proper time period according to the graphs in Figure 7.

CHART 2

First Period	Second Period	Third Period
a) _____	a) _____	a) _____
b) _____	b) _____	b) _____
c) _____		c) _____
d) _____		d) _____
		e) _____
1 year	5 years	10 years 15-20 years

Features:

construction
slow-down
big lay-offs
new business
employment increasing
few markets lost
business closing
rumors
housing development
losing money
closure

STAGE THREE: DO YOU MINE?

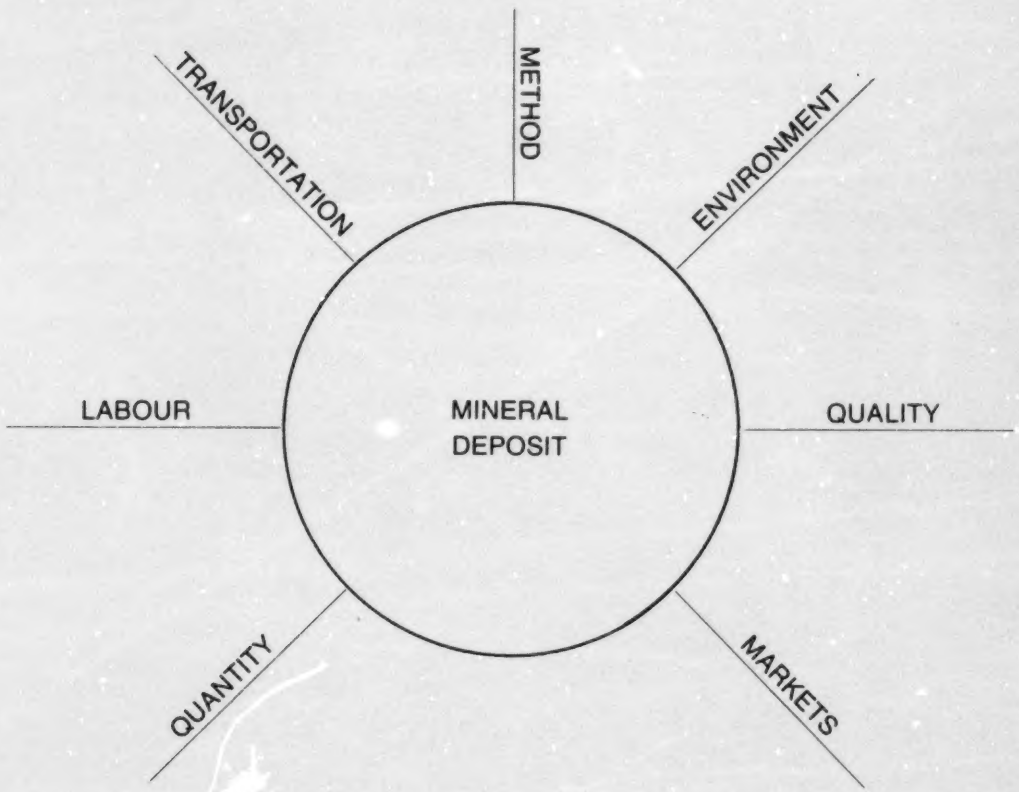


Figure 8

The decision whether to mine or not to mine depends on many factors. The diagram above shows the different factors one must consider. Look at the diagram carefully before starting on the next activity.

CHECKING YOUR UNDERSTANDING

Activity One

Look at the factors in Figure 8. Give a short explanation of the importance of each factor.

Mining Certificate

Transportation

Markets

Labour

Method

Quality

Environment

Quantity

Achievement: *Excellent* ☐ *Good* ☐ *Fair* ☐

STAGE FOUR: THE MINING TOWN

Let us assume that the company has considered the prospects of mining in a certain location. From its point of view, it has decided that the new venture would be a good money-maker.

Now, let us look at the *three* major concerns from the point of view of the townspeople.

1. Economic (business).
2. Social (effects on people).
3. Environmental (our surroundings).

It is easy to appreciate the positive *economic benefits* of any industry, *e.g.*, jobs, money, and better town services. There are, however, important and less desirable results that come along with the birth of a *one-industry town*. To help you identify and understand these, examine the following situation. Then compare your answer with others in your class.

Activity One — Population

There is a rapid increase in population, especially in towns dependent on the mining industry.

Example:	Labrador City	1961 — 386
		1971 — 7 800
	Dawson City	1896 — Hundreds
		1900 — Thousands

Suppose that tomorrow morning an additional 5 000 people arrived in your hometown. Make a list of problems that this situation might cause for the town and its people.

Large projects like mining bring about dramatic changes in the lives of the people in the community. This is one of the *social effects*.

One way to try to measure this change is to interview some of the *residents* of the town to get their *opinions*. Read the following statements:

Mayor: I see the mine having many positive effects such as increased employment, which we need so badly, more tax revenue, and a general increase in the standard of living. The town, I feel, has a very bright future.

Businessman: The opening has been great for sales. I have had to hire extra staff, enlarge my store, and we are now able to provide a greater variety of merchandise. The prices are reasonable too.

Social Worker: The increase of population has put a strain on the services we offer. It seems that the new *prosperity* has brought its share of social problems — lack of housing and personal adjustment problems.

Clergyman: I am glad for the benefits that our people are enjoying, but sometimes I fear that we may lose sight of what is really important in life . . . family, community, church and friends.

Policeman: A larger number of residents means more work for our men. Everything from traffic mishaps, shoplifting, and delinquency seems to increase. I guess it's all part of growing into a modern town.

Senior Citizen: Nowadays we seem to have more and bigger of everything. I'm not so sure they are really better off, but you can't argue against progress, I guess.

Chamber of Commerce: We are glad for the positive benefits it is bringing to our town. I feel we should be trying to bring in other new industries because we know what mining towns have done in the past. I am *cautious* about new prosperity. A *one*-industry town is not stable.

Teenager: I like having more places to hang-out, more stores, more restaurants, lots of sporting activities, more people my own age. I can find a part-time job at Christmas and during the summer holidays. I don't think I would want to work in the mine permanently, though.

Environmentalist: I see the many benefits that this mine brings to the town and region, but what worries me is the lack of concern for the effects this type of mine (surface) can have on the land and the ecology of the area.

CHECKING YOUR UNDERSTANDING

Do *one* of the following:

Activity One

You are an Investigative Reporter.

Using the personal statements you have just read, write a short news article in which you try to give the feelings of the people towards the town since the opening of the mine.

or

Activity Two

Choose any *one* statement and write your opinion, agreeing or disagreeing with what was said.

or

Activity Three

What do you think the following persons might have said? Write their feelings or opinions.

1. Principal of a four-room school.
2. Librarian.

SUMMARY

This unit of study draws attention to one of our natural resources — minerals. What you have discovered about mineral development is similar in effect anywhere in Canada. No matter what resource is developed, there will be some positive as well as some negative effects on the people in the location.

When Canadians have to make decisions on questions of *resource development*, it is necessary that they understand the *needs, wants* and *values* of the people in whatever part of our country the resource is to be developed. The decision made may not be the one you would have chosen, but you must *appreciate* the reason it was made. The coastal fisherman must try to understand the concern of the prairie farmer about increased freight rates. Similarly, the farmer must make efforts to see the view of the fisherman on fish prices and the conservation of fish stocks.

POSTSCRIPT

Activity One

Read the following news clippings which were taken from a local newspaper, *Pan-Canadian Journal*. Write what you think the last news clipping said.

PAN-CANADIAN JOURNAL **July 12, 1956**

Yourtown: Company geologist says site promises big mineral find. Mine to open in two to three years. Richest deposit in 50 years.

Figure 9

PAN-CANADIAN JOURNAL **October 15, 1964**

Yourtown: The council approves olympic-sized stadium to be started officially in the Spring. Also last of side streets is paved in Yourtown sub-division.

Figure 10

PAN-CANADIAN JOURNAL **September 16, 1974**

Yourtown: Mine Manager, Mr. Anderson, announces more down time and further layoffs for the winter season. The markets are difficult to keep. I am worried about this new mineral find in Mexico.

Figure 11

PAN-CANADIAN JOURNAL **April, 1985**

Yourtown: _____

_____

_____

_____

_____

_____

_____

Figure 12

ACKNOWLEDGEMENTS

This phase of the work of the Canada Studies Foundation grew out of Hodgetts and Gallagher's *Teaching Canada for the 80s. Understanding the Canadian Environment*, the works of the Atlantic Canada Centre attempts to translate the concepts of Chapter Four, *'Teaching the Canadian Environment'*, into curriculum materials for the junior high school. The authors are greatly indebted to Hodgetts and Gallagher for their profound insights.

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We dedicate this booklet to Andrea, Michelle, Allan, Heather, Erin and Colleen in the hope that school might provide a richer appreciation of their homeland.

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